UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/041,769	01/08/2002	John P. Havener	PAVI-25,964	4865

25883 7590 05/06/2004

HOWISON & ARNOTT, L.L.P
P.O. BOX 741715
DALLAS, TX 75374-1715

EXAMINER	
BAHTA, KIDEST	

ART UNIT	PAPER NUMBER
2125	

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/041,769	HAVENER ET AL.	
	Examiner	Art Unit	
	Kidest Bahta	2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 53-79 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 53-79 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Objections

1. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 78 - 80 been renumbered claims 77-79.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 53-79 are rejected under 35 U.S.C. 102(e) as being anticipated by Cawlfield (U.S. Patent 4,770,841).

Regarding claims 53, 62, 66 and 70, Cawlfield discloses that a dynamic model of the plant that represents the dynamics of the plant over the input space (; providing a steady state model that represents the steady state operation of the plant

over the input space (column 5, lines 1-10); an input device for inputting to the dynamic model inputs to the plant (Fig. 1); a controller for optimizing the dynamic operation of the plant utilizing the dynamic model to predict optimized destination input values uf when moving from a present input value uf to the destination input value uf (column 18, lines 29-44) and a parameterizer for parameterizing the dynamic model and the operation thereof at the destination value uf (Fig. 2); providing a dynamic model having a set of operating parameters valid in a first portion of an input space, wherein the parameters thereof are variable (column 18, lines 29-44); providing a steady state optimizer (column 9, lines 4-24).

Regarding claims 54, 63-65, 68 and 74-75, Cawlfield discloses that the parameterizer includes: a steady state model that represents the steady state operation of the plant over the input space of the plant (Abstract); the steady state model determining the final steady state value as the destination value uf (column 3, lines 10-15); and parameterizing the operation of the dynamic model on the operation thereof at the destination final steady state value. parameterizer is operable to determine the steady state value with a steady state model of the plant (column 2, lines 58-67).

Regarding claims 55, 60, 67, 69 and 76, Cawlfield discloses that the operation of the dynamic model is parameterized with the steady state model over the input space to minimize errors in the operation of the dynamic model when operating over the input space (column 9, lines 4-41) and the dynamic model has a gain k and the step of parameterizing is operable to parameterize the operation of the dynamic model over the input space by varying the gain k thereof (column 1, lines 6-13); predicting a dynamic

move from an originating point in the first portion in the input space to a point in the input space corresponding to the defined input value (column 4, lines 30-45).

Regarding claims 56-58, 70-72 and 77-79, Cawlfield discloses that the steady state model has a gain K, wherein the step of parameterizing is operable to parameterize the operation of the dynamic model by varying the gain k thereof in proportion to the gain K of the steady state model (column 3, lines 5-15); the unparameterized gain k of the dynamic model is valid in only a portion of the input space (column 8, lines 1-11); the dynamic model represents the dynamic response of the plant over substantially all of the input space, with only the gain k of the dynamic model validly represented over the portion of the input space (column 5, lines 1-11).

Regarding claims 59 and 61, Cawlfield discloses that plant and predicting a plurality of input values over a time horizon to define a dynamic operation path of the plant between the current output value and the desired output value over the time horizon (column 2, line 58 - column 3, line 15); and the step of parameterizing comprising optimizing the operation of the dynamic model at each of the different time positions over the time horizon in accordance with a predetermined optimization method that optimizes the predetermined optimization objectives to achieve a desired path over the time horizon (column 4, lines 25-33); minimizing the primary error value output by the error generator with an error minimization device in order to determine a change in the input value (column 1, lines 6-13); summing with a summation device the determined input change value with the original input value for each time position to provide a future input value (Fig. 2A); and controlling the operation of the error

minimization device to operate under control of the step of optimizing to minimize the primary error value in accordance with the predetermined optimization method (column 18, lines 29-44).

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure

5. Any inquiry concerning communication or earlier communication from the examiner should be directed to Kidest Bahta, whose telephone number is (703) 308-6103. The examiner can normally be reached on M-F from 7:30 a.m. to 4:00 p.m. EST If attempts to reach the examiner by phone fail, the examiner's supervisor, Leo Picard, can be reached (703) 308-0538. Additionally, the fax phone for Art Unit 2125 is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist at (703) 305-9600.

Kidest Bahta
April 29, 2004